

## HOLMES - A HOLOGRAPHIC FILM MEASURING MACHINE

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### ABSTRACT

For the evaluation of in-line bubble chamber holograms recorded on 70 mm wide holographic film, a scanning and measuring machine has been constructed, whose design details and performance characteristics will be presented. Particular features of the machine include ballscrew-driven vacuum, stabilized air bearing supported x, y, z-stages on granite guidance slabs, providing horizontal movements only. A similar fourth stage carries an image transfer lens, which enables in conjunction with the z-stage a zooming operation. The reconstructed image is presented to the operator on TV monitors in three different ways: (a) one overall, unmodified image for general scanning and orientation purposes; (b) one highly anamorphic image for detailed studies of the interactions; (c) one highly magnified small portion of the image for precise positioning. Spatial filtering of the three image forming partial beams yields a high optical signal-to-noise ratio.

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